Whooping Crane Reintroduction

Questions and Answers about the
Final Rule and Environmental Assessment

History and Background

Why did the U.S. Fish & Wildlife Service prepare a final Environmental Assessment (EA) and publish a final Rule to establish a nonessential experimental population of whooping cranes in the eastern U.S.?

Under the National Environmental Policy Act, the Service is required to prepare an environmental assessment for any action that significantly affects the quality of the human environment. The EA analyzed a number of different alternatives for accomplishing the goal of reintroducing whooping cranes as a migratory population before approving the use of ultralight aircraft to lead an experimental migration. The final rule establishes a nonessential experimental population (NEP) of whooping cranes for the purposes of the experiment, and authorizes the experiment to go forward.

Why is there a plan to reintroduce a migratory flock of whooping cranes to the eastern U.S.?

Wild whooping cranes currently exist in two flocks, a non-migratory flock in Florida and one migratory flock that summers in Wood Buffalo National Park in Canada and winters near and at Aransas National Wildlife Refuge (NWR) in Texas along the Gulf coast. It is possible that all or most of these birds could be wiped out from a single event such as a hurricane, disease outbreak, toxic spill, or prolonged drought. This makes the species vulnerable to extinction. To ensure that the whooping crane survives, the International Whooping Crane Recovery Team has recommended that an additional flock of whooping cranes be established that is separate from the single remaining natural wild migratory population. If successful, this project will result in the establishment of the second migratory population.

Who is responsible for the reintroduction?

In 1985, the Director-General of the Canadian Wildlife Service and the Director of the U.S. Fish and Wildlife Service signed a memorandum of understanding (MOU) entitled "Conservation of the Whooping Crane Related to Coordinated Management Activities." The MOU was revised and signed in 1990. The U.S. Geological Survey-Biological Resources Division (Patuxent) and Parks Canada (Wood Buffalo National Park) were added signatories in 1995. The MOU discusses disposition of birds and eggs, postmortem analysis, population restoration and objectives, new population sites, international management, recovery plans, and consultation and coordination. All captive whooping cranes and their future progeny are the joint responsibility of the U.S. Fish and Wildlife Service and the Canadian Wildlife Service. Consequently, both nations are involved in recovery decisions.

In 1996 the whooping crane recovery teams of Canada and the United States were merged into an international team, now known as the International Whooping Crane Recovery Team. This Team developed a recovery plan that calls for the establishment of a second migratory whooping crane population in the eastern U.S. With that goal in mind, the Whooping Crane Eastern Partnership was formed in 1998 under the leadership of the U.S. Fish and Wildlife Service.

Who is the Whooping Crane Eastern Partnership?

The Whooping Crane Eastern Partnership is a consortium of different private organizations and public agencies working under the authority of the Endangered Species Act to provide for recovery of the whooping crane by establishing an eastern migratory flock. Founding partners include the U.S. Fish and Wildlife Service, Operation Migration, Inc., the U.S. Geological Survey''s Patuxent Wildlife Research Center, the International Crane Foundation, the Wisconsin Department of Natural Resources, National Fish and Wildlife Foundation and the Natural Resources Foundation of Wisconsin. Many other flyway States, private individuals and conservation groups have joined with and support WCEP, and have donated resources, funds and personnel.

Why not relocate some of the migratory whooping cranes from the Aransas/Wood Buffalo flock?

Since the Aransas/Wood Buffalo flock is the only self-sustaining wild migratory population, it is too risky to do anything that might harm this population. Instead, reintroduction efforts will focus on using young hatched from whooping cranes already in captivity at captive breeding centers. It is also not practical to take eggs from the wild flock because the wild flock is located in a remote area that poses serious logistical obstacles to egg collection. The wild flock also lay their eggs too late in the year to use for ultralight aircraft training in Wisconsin.

How much will this project cost?

The current cost estimate is $1.3 million, with more than 50 percent of that amount coming from private donors. Most of the remainder is not new government expenditures.

Why was Wisconsin chosen as the site for the reintroduction?

Wisconsin was chosen for several reasons. Wisconsin is within the historic breeding area of migratory whooping cranes and the reintroduced Wisconsin flock will be separated from the existing migratory flock. In addition, suitable habitat on Federal, State, and private lands is available. Wisconsin's long tradition of environmental commitment and support from the public increases the chances for success within the state.

If this reintroduction is successful, will the whooping crane be taken off the endangered species list?

If this reintroduction is successful and the ongoing reintroduction of a non-migratory whooping crane population in Florida also is successful, the Federal status of the species could be changed, eventually, from endangered to threatened. This is a less restrictive designation for species that still need the protection of the Endangered Species Act, but are not in danger of extinction in the foreseeable future. While it may be possible in the long term to fully recover the species, removal of the whooping crane from the Federal list of threatened and endangered species would require further steps. Even if the whooping crane is removed from the Endangered Species list, it will still be federally protected under the Migratory Bird Treaty Act.

Rearing Crane Chicks for Reintroduction

Where do the chicks for the whooping crane reintroduction come from?
The chicks come from existing captive breeding flocks. The three primary captive breeding centers are located at the U.S. Geologic Survey''s Patuxent Research Facility in Maryland, the International Crane Foundation in Wisconsin, and the Calgary Zoo in Alberta, Canada.

Where are the cranes used for the reintroduction being reared?
The crane chicks are being captive-reared at the U.S. Geological Survey's Patuxent Wildlife Research Center until they are 40 to 60 days old. Training started from just before hatch with exposure of the eggs to sounds of crane calls and ultralight aircraft engine noise. At Patuxent, chicks will be trained to follow the ultralights in the protected captive environment and later in the out-of-doors pens at the center. When the chicks no longer need heat and protection from the elements, they will be moved to Necedah National Wildlife Refuge for flight training behind the ultralight.

What happens to the chicks after they arrive at Necedah National Wildlife Refuge?
To promote wildness in the birds, every attempt is made to provide as natural an experience as possible. At the refuge, the birds would be housed in pens painted natural colors and disguised with trees. Feed and water containers would be made of natural materials and all human paraphernalia removed. The enclosures would be constructed in the bird's natural wetland habitat and access by people restricted. Personnel from Operation Migration, Inc. would conduct most of the conditioning after the cranes arrive at Necedah NWR.

Why do the people rearing the cranes wear costumes?
When teaching cranes to follow an ultralight aircraft they can easily become overly tame. If this happened, they could suffer an "identity crisis" when they reach breeding age and not recognize other whooping cranes, or become a nuisance because they associate people with a source of food. While interacting with the birds, the Operation Migration handlers minimize human contact time. They work in silence while covered head to toe in gray fabric costumes that disguise the human form. This is done so that the cranes will not be familiar with the normally dressed humans they may encounter after they are released.

Will the fact that researchers have worn costumes make a difference in how the birds perceive humans?
We hope that by avoiding talking and disguising the human form the birds will not be familiar with the normally dressed humans that they may encounter in the wild. Their natural fear of the unknown will keep them from approaching people and aid in maintaining their wildness.

How are the cranes being fed? What do they eat?
The birds are being fed a pelletized food that was developed by USGS/Patuxent Wildlife Research Center and commercially produced. It contains all the minerals, proteins and vitamins needed by the growing birds as well as medication to prevent parasites. The chicks will also be allowed to forage on natural foods as they grow older so that they could make the transition to survival in the wild. We will use special treats (mealworms, crickets, and kernel corn) as aids in training the birds.

During training at Necedah National Wildlife Refuge when the birds begin to be allowed their freedom during the day, we will practice "controlled food withholding" to encourage them to return to the pen in the evening. This will help avoid unnecessary handling of the cranes. During the migration, we will mix the pelletized feed with whole corn. The birds will be fed from metal feeders that would hang in the pen and would be painted earth tones to make them look more natural. We will use two or more feeders at all times so one dominant bird could not monopolize a single food source.

How will cranes at Necedah National Wildlife Refuge be protected from predators?
The bottom section of the pen is buried in the ground and the entire structure covered in wire mesh. The pen will have a net over the top and several strands of electric fence wire would protect the perimeter to deter predators. Handlers will monitor the pen area several times daily.

After the cranes have learned to fly and before they migrate, is there a chance that they would leave the Refuge and fly to nearby wetlands?
At that early stage of life the birds are still immature. They associate the handlers, the aircraft and the pen area with security and comfort. When they are released during the day they may wander but they do not go far. This behavior is natural as the birds learn about their environment and begin to explore.

Will people be allowed to view any part of the crane rearing and training at Necedah National Wildlife Refuge?
There are plans to construct remote blind sites at Necedah NWR to allow the public as much viewing opportunity as possible without reducing wildness in the birds. Maintaining the cranes' wild nature is critical to their future survival in the wild after they have been released in their wintering habitat at Chassahowitzka NWR in Florida. We need to prevent the birds from associating food or care of any sort from contact with humans, which is why the birds only see costumed handlers and pilots, and never a human form. Ideally, they will never hear a human voice or get familiar with human artifacts like trucks or buildings. To maintain this isolation from humans during the migration, the cranes are always kept away from the ground crew's activities and other human habitation.

During migration, there is no way to know exactly what the flight path will be each day, so viewing the cranes flying overhead behind the ultralights can only be a matter of chance. It is hoped that a safe opportunity can be arranged for people to see them fly overhead while in training at Necedah NWR and perhaps when they arrive at Chassahowitzka NWR. But it is most critical that the human form not become familiar to the birds. The birds' safety and future survival is a critical factor in this reintroduction.

Migration Aspects

Why do the cranes have to be taught to migrate?
Cranes learn the migration route from the previous generation. Chicks hatched on the nesting grounds learn to fly with their parents, following them in the fall to the wintering grounds. Their destinations and the route they use may have evolved for thousands of years but it exists only in the memories of the birds that use it. If all individuals of a species are lost from a region, the

route is lost forever. Birds that are raised in captivity lack an older generation to teach them and they tend to become resident, staying the entire year in the same location.

Why use ultralights to lead the birds?
Several methods have been used in an effort to reintroduce birds in a migratory situation. Whooping crane chicks have been placed with adult sandhill cranes in a cross-fostering program. Birds have been conditioned to follow handlers in a truck and led along a predetermined route. Also, birds have been released with a similar wild species prior to migration in hopes they would follow them south. In another study, cranes were transported to a staging area and allowed to fly free. They were then recaptured and moved farther south and again released. This was repeated along the entire route in hopes the birds could connect-the-dots during the return migration. All of these methods have resulted in varying degrees of success but none have been as successful as the ultralight-led technique. It most closely replicates the natural process of a parent leading the offspring south. Ultralights are the only type of aircraft that can fly slow enough (and not stall) to enable birds to follow. Operation Migration, Inc. has conducted ten migration studies with three species of birds and worked with the Patuxent Wildlife Research Center to establish the protocol that would be used to reintroduce whooping cranes into eastern North America.

How do you train the cranes to follow the ultralight?
The process is based on the bird's natural instinct to imprint. Once hatched, the chick is attracted to the first creature that nurtures it, normally the parent. This is nature's way of ensuring the offspring stays close and is protected by the adults. The procedure we follow replaces the parent bird with the handler and so the birds imprint on the surrogate parent. Prior to hatching, a recording of the aircraft engine is played to the chicks. They are introduced to the ultralight at about seven days of age and they soon associate it with the handler. The birds are not trained to follow the aircraft; instead they are conditioned to it as an extension of the handler. After they arrive on the wintering grounds and reach the sub-adult stage, they become independent (much like human teenage offspring) and they no longer look to the handler and aircraft for security and comfort. Unlike training, the conditioning diminishes with maturity.

Will ultralights lead the cranes back in the spring?
The cranes learn the migration route during the trip south. In the wild they often leave the parent birds during the course of the winter, yet still return to the summering area in the spring. Based on previous research with sandhill cranes, a closely related species, whooping cranes are expected to migrate back to Wisconsin on their own, the next spring. This spring, 10 of the 11 cranes that made it successfully to Florida in the Fall of 2000 were observed at Necedah.

What role will state wildlife agencies have in the states along the migration route?
Our state wildlife agency partners identified stakeholder concerns related to the project, proposed migration stopover locations and will help coordinate the migration with private and public landowners. Some of the migration stopover locations are located on prime state-owned wildlife lands. States have been kept fully informed of progress made by the migration team. The Whooping Crane Eastern Partnership obtained the support and approval for the sandhill crane migration study in 2000 from all the states within the NEP designation area.

Will people be able to watch or view the cranes during the migration?
During migration it may be possible to see the birds from a distance when they land or take off from an overnight location. But the need to keep the cranes from imprinting on humans means

that all efforts are taken to keep people out of the birds' range of vision. No one - not even project leaders or participants - would be allowed to approach the birds. The ultralight pilots take measures to ensure that they are never seen by the birds out of costume, even while they are flying. In addition, video footage and still photographs of the flights and the birds would be available to the public through the news media, on the Whooping Crane Eastern Partnership website, and on the websites of the individual organizations that are part of the Partnership. The public will also be able to track the birds' progress by visiting the WCEP website.

In the summer of 2000, two whooping cranes from the experimental flock in Florida population migrated more than 1,000 miles on their own to rural Michigan. Does this mean that the project is unnecessary?

This unexpected development resulted in the first whooping crane sighting in Michigan in more than 100 years. Although not technically called a migration, the birds' movements were encouraging. Even though two cranes moved to Michigan last summer, only the female made it safely back to Florida. There is no indication that another journey will be initiated next year. If the migration to Michigan were to become an annual event, it offers another migration route in the east for whooping cranes. Having multiple populations on different migration routes decreases the chance that a disease outbreak, habitat loss or bad weather in a given area may wipe out the entire population of cranes.

Crane Biology

How are whooping cranes different from sandhill cranes?

Whooping cranes stand 5-1/2 feet tall, and are the tallest birds in North America. Sandhill crane adults are about 4 feet tall. Adult whooping crane plumage is white with black wing tips, whereas adult sandhills are grey or sometimes grey and tan. They both have a bald spot — a red, bare patch of skin on their forehead. Whooping cranes are aquatic birds, spending virtually all of the time in wetlands. Sandhill cranes will use wetlands, but also feed in upland habitats. Whereas sandhill cranes have adapted to human agriculture and feed extensively on grain, seeds and tubers, whooping cranes prefer marsh habitat and prefer to eat crabs, invertebrates, frogs and minnows. And of course, sandhill cranes are much more common than the endangered whooping crane. Sandhill cranes occur throughout much of North America and number in the tens of thousands. Whooping cranes are known from a limited area in North America and the total world population is about 400 individuals.

What is the current status of the whooping crane - is it in danger of extinction?

The whooping crane is a federally endangered species in the United States. It is one of the world's rarest birds. The species was thought to number "in the thousands" in North America before European settlement caused population declines. Archival evidence suggests that by 1865, its population was 700 to 1,400. Their numbers dropped rapidly and by 1890 the whooping crane had disappeared from the heart of its breeding range in the north central United States. By 1938, only two small flocks remained - one non-migratory flock in southwest Louisiana, and one migratory flock that nested in Canada and wintered in Texas. In 1941, there were only 21 whooping cranes in North America.

From near extinction 60 years ago, captive breeding efforts and the protection provided by the Endangered Species Act have enabled whooping crane populations to slowly increase. There are

now 384 whooping cranes in North America - approximately 174 in the only migratory flock, which breeds in Canada and winters in Texas; 86 non-migratory birds in central Florida; 120 in captivity, and two in the Rocky Mountains.

While whooping cranes are not in immediate danger of extinction, extinction in the wild without reintroductions would be likely because of the small size of the single wild natural migratory flock. For this reason, multiple efforts are underway to reduce the danger of extinction by increasing populations in the wild, including a new migratory population in the East.

What caused the whooping crane's near extinction?

Several factors contributed to the historic decline of whooping cranes. Much of their wetland habitat was drained and converted to farm land. The migratory populations in the central U.S. and Canada lost large portions of their breeding and wintering habitat in the late 1800s and early 1900s. Then the non-migratory population lost much of its habitat in the coastal marshes and prairies of Louisiana and Texas as wetlands were converted for rice production. In addition to outright habitat loss, these activities increased the amount of human disturbance, which may have had adverse effects on crane behavior. At the same time, hunting, egg collecting, and specimen collecting were a substantial drain on the population, particularly from 1870 to 1920.

Are there currently threats to whooping cranes?

The wild flock winters in a small area in Texas where all the birds could be lost to a catastrophic event like a hurricane, red tide, or a contaminant spill which could destroy their habitat, eradicate their food or kill the birds directly as a result of ingestion of toxins. For example, a hurricane in 1940 contributed to the loss of half the population of nonmigratory whooping cranes residing in Louisiana at that time. The population never recovered from that loss and the last bird was captured and moved to Aransas National Wildlife Refuge in Texas in 1949.

The principal threat continues to be a contaminant spill along the Gulf Intracoastal Waterway that bisects the winter range. It is one of the busiest waterways in the world and much of the commercial barge traffic is petrochemical products including crude petroleum, gasoline, benzene, and basic industrial chemicals. Each of these cargoes is chronically to acutely toxic.

Why doesn't the flock of whooping cranes in Florida migrate?

The non-migratory whooping crane population in Florida was reintroduced in 1993, a product of captive breeding and reintroduction efforts. Since migration is a behavior that must be learned by cranes, the Florida whooping cranes are expected to remain in areas near where they were released. The recent dispersal of two cranes that wandered as far away as Michigan in the summer of 2000 is thought to have occurred as a result of a severe drought in Florida which made their home marshes unsuitable for breeding. The dispersal observed in those two cranes is expected to be an infrequent and unpredictable event in the future.

What habitats do whooping cranes use?

Whooping cranes spend most of their time in shallow water wetlands where they feed and nest. Nests are built on small islands of bulrushes, cattails, and sedges that provide protection from predators. At night (when not incubating), whooping cranes stand (roost) in shallow water where they are safe from coyotes and bobcats.

During migration, the wild population uses a variety of feeding and roosting habitats, including croplands, marshes, and submerged sandbars in rivers. They winter in bays and coastal marshes in and near the Aransas National Wildlife Refuge on the Texas Gulf Coast. The experimental non-migratory population inhabits palmetto grasslands, savannahs, and shallow marshes in the Florida's Kissimmee Prairie region.

What do whooping cranes eat?

Whooping cranes feed in shallow water wetlands and eat insects, minnows, crabs, clams, crayfish, and frogs. During migration and on their wintering grounds they sometimes feed in upland areas, especially in areas that have been flooded or burned. There they forage for acorns, snails, insects, rodents, and other food items.

How long do whooping cranes live?

Whooping cranes may live up 25 years in the wild. Captive birds have lived up to 40 years.

How many young does each whooping crane pair produce each year?

In Wood Buffalo Park, 50 pairs of cranes produce from 15 to 30 chicks each year. Whooping cranes do not start breeding until they are four or five years old even though they have their adult plumage by the time they are a little over one year old. When they do mate, they are monogamous and have the same mate for life. If one of the pairs dies, the remaining bird will mate with another. Whooping cranes usually nest once each year, but sometimes they will lay a second clutch of eggs if their first is destroyed. Occasionally a pair will skip a nesting season if conditions are unsuitable or for no apparent reason.

Whooping crane pairs lay two eggs in late April to mid-May, with hatching one month later. The parents share incubation and rearing duties although the female takes the primary role in feeding and caring for the young. Most often, successful nesting pairs raise one young each year. As a rule, fierce competition between the two chicks usually results in the death of the smaller, weaker sibling. Occasionally, when food supplies are abundant and the chicks are perhaps more evenly matched in size and strength, whooping cranes have been known to successfully raise two chicks.

Are the remaining whooping cranes genetically diverse enough to survive into the future?

The population reached a low of 21 birds in 1945-46 which resulted in a decline in diversity and changes in gene frequencies. However, the population continues to expand and genetic diversity, though reduced, appears to be comparable to many other crane populations.

Endangered Species Act Protection for a "Nonessential Experimental Population" of Whooping Cranes

Why does the experiment require designating the flock as a "nonessential experimental population"?

Introduction of an endangered species into a new area can result in new federal regulation, which sometimes prompts negative public reaction. The designation under this rule allows the relaxation of provisions of the Endangered Species Act, which has already demonstrated and can be expected to result in increased public acceptance of the reintroduction.

This designation is made possible by provisions contained within section 10(j) of the Endangered Species Act, as amended. The population is considered *experimental* because it is being (re)introduced into suitable habitat that is outside of the whooping crane's current range, but within its historic range. It is designated *nonessential* because the likelihood of survival of the whooping crane, as a species, would not be reduced if this entire population was not successful and was lost. To designate this nonessential experimental population, the Secretary of the Interior must determine that the action will not result in jeopardy to the continued existence of the whooping crane. Survival of the whooping crane as a species has been determined to be secure, based upon the existence of the wild, migratory population and the captive breeding flocks in multiple locations. The nonessential experimental population status will protect this whooping crane population as appropriate to conserve the population, while still allowing the presence of the cranes to be compatible with routine human activities in the reintroduction area. We believe the nonessential experimental designation will allow us to retain the full support of the public, which will be critical to the success of the project.

What would happen if someone shoots one of the whooping cranes in this population?
Because of the experimental non-essential designation in this rule, if the shooting is determined to be accidental and occurred incidentally to an otherwise lawful activity that was being carried out in full compliance with all applicable laws and regulations, no prosecution under the Endangered Species Act would occur. In the case of an intentional shooting, the full protection of the Endangered Species Act could apply.

Are there other laws that would protect this flock of whooping cranes?
Yes, they would be protected under applicable State laws for non-game species and the federal Migratory Bird Treaty Act, which protects all birds that migrate such as herons, egrets and songbirds.

What would happen if whooping cranes from this population try to nest on my property - will this affect how I can use my property?
As a result of the flexibilty associated with this rule, no conflicts are envisioned between the whooping cranes's reintroduction and activities on private lands. Any disturbance of nesting cranes on private property that is accidental or incidental to an otherwise lawful activity, such as recreation (hunting, trapping), agricultural practices (plowing, planting, application of pesticides, etc.), construction or water management would not be considered an illegal activity under the Endangered Species Act.

Are private property owners part of this project?
Yes, absolutely. This project could not go forward without the assistance and involvement of private citizens who live in remote areas along the seven-state flyway route. More than 40 private landowners have offered their property to be used as safe overnight sites for the birds and landing sites for the ultralights on the migration route.

Additionally, many private individuals, businesses and corporations have donated funds, services, personnel and products through the Whooping Crane Eastern Partnership's non-profit and fund raising entities.